Seat No.:	Enrolment No.
Seat No	Ellionnelli No.

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. - SEMESTER - IV • EXAMINATION - WINTER 2012

Subj	ect	code: 140501 Date: 27/12/2012	
_		Name: Physical and Inorganic Chemistry 2.30 pm - 05.00 pm Total Marks: 70	
Inst	ruct	tions:	
	1. 2. 3.	Make suitable assumptions wherever necessary.	
Q.1	(a)	Answer the following: 1. What do you understand by the term "component". 2. Define Baker-Nathan effect. 3. Differentiate between exothermic and endothermic reaction. 4. What is roll of "salt bridge"? 5. What do you meant by HPLC? 6. Distinguish between Transitional and Nontransitional elements. 7. Classification of Explosives.	07
	(b)	What is Phase rule?.Describe phase diagram of Triple point of one	07
Q.2	(a)	Define the term "Chromatography"? Explain the principle of gas Chromatography technique with a neat schematic diagram of Instrument and write it's Application, Advantages and Disadvantages.	07
	(b)		
	(b)		ım 07
Q.3	(a)	Define and Explain with suitable example of Inductive effect, Resonance effect and Steric effect of electron displacement.	07
	(b)	What is Reactive intermediate? Describe with example of Hyper conjugation.	07
Q.3	(a)	• • • • • • • • • • • • • • • • • • • •	
	(b)	Covalent, Co-ordinate and Ionic bonds. Compare and Describe the Valence Bond (VB) and Molecular Orbital (MO theory of bonding.	07)) 07
Q.4	(a)	· · · · · · · · · · · · · · · · · · ·	07
	(b)	What is Thermochemistry? Describe the Kirchoff's Equation for effect of Temperature and Pressure in chemical reaction with change in Enthalpy,	07

Q.4	(a)	Define and Classification of Rocket propellant. Describe with reason why	
~ ··	(44)	Bipropellant is more widely used in a Rocket?	07
	(b)	What is Explosive? Discuss any two manufacturing process of explosives	07
		and write the precautions during the storage of explosives,	07
Q.5	(a)	What do you meant by Metallurgy? Write the properties and applications	
		of steel alloys and Non ferrous alloys.	07
	(b)	Describe with neat diagram of the Froth flotation process and Electromagn	etic
		separation process for Ore dressing.	07
		OR	
Q.5	(a)	Explain Buffer capacity. Describe Hydrogen - Oxygen fuel cell with scheme	natic
		diagram and write the net cell reaction.	07
	(b)	What is Conductometry? Explain and write the application of conductome	tric
	()	analysis.	07
